


P2SC-ROB-WR-257 - 20150223 Weekly report #257	P2SC Weekly report	
Period covered: Date:	Mon Feb 23 to Sun Mar 01, 2015 04 Mar 2015	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

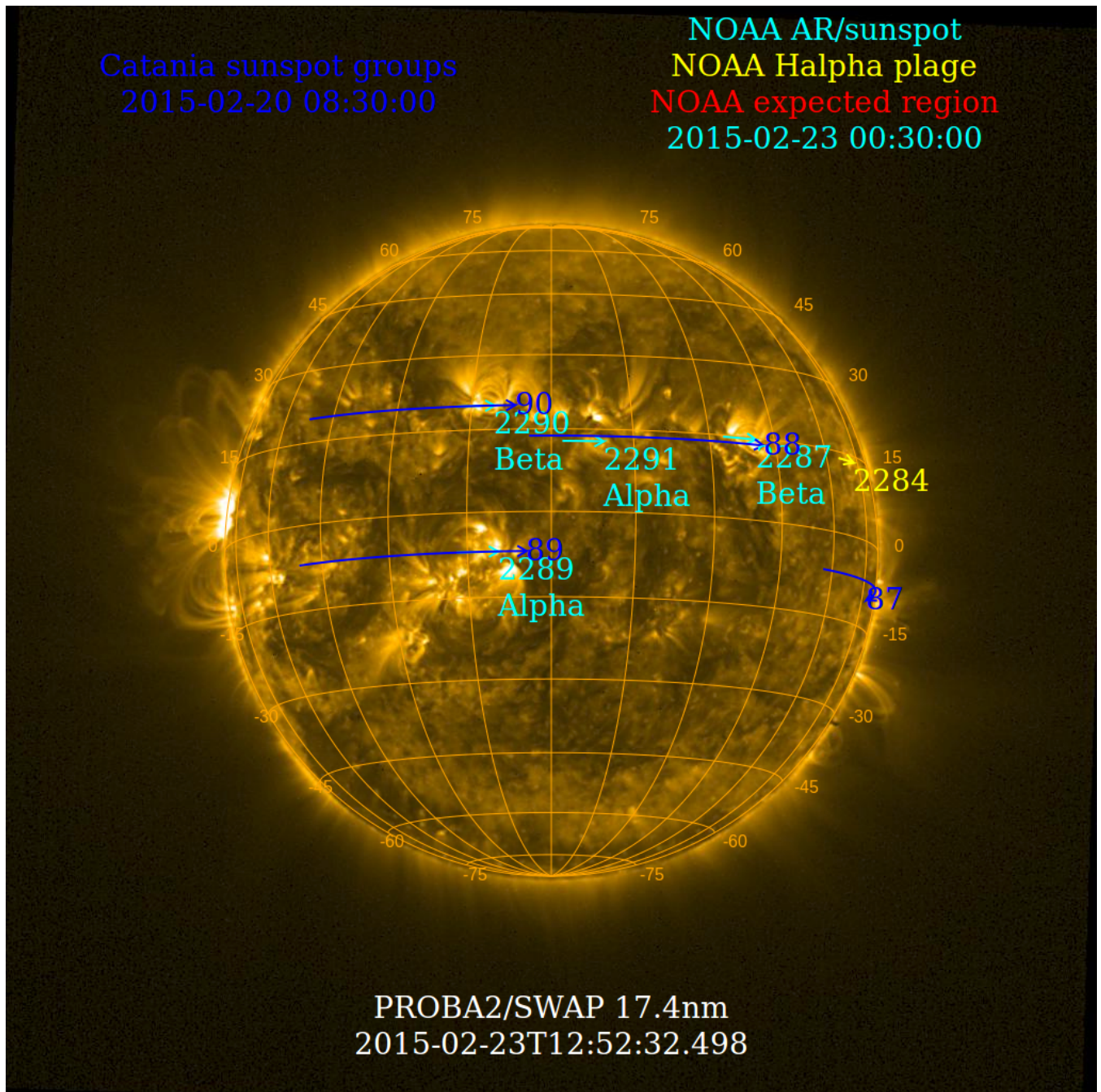
The level of solar activity¹ fluctuated between **quiet** and **low** this week.

Only M- and X-flares are mentioned, the most energetic one(s) per day are presented in **bold**:

	Monday 23 Feb	Tuesday 24 Feb	Wednesday 25 Feb	Thursday 26 Feb	Friday 27 Feb	Saturday 28 Feb	Sunday 01 Mar
Activity	low	low	quiet	very low	low	low	low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

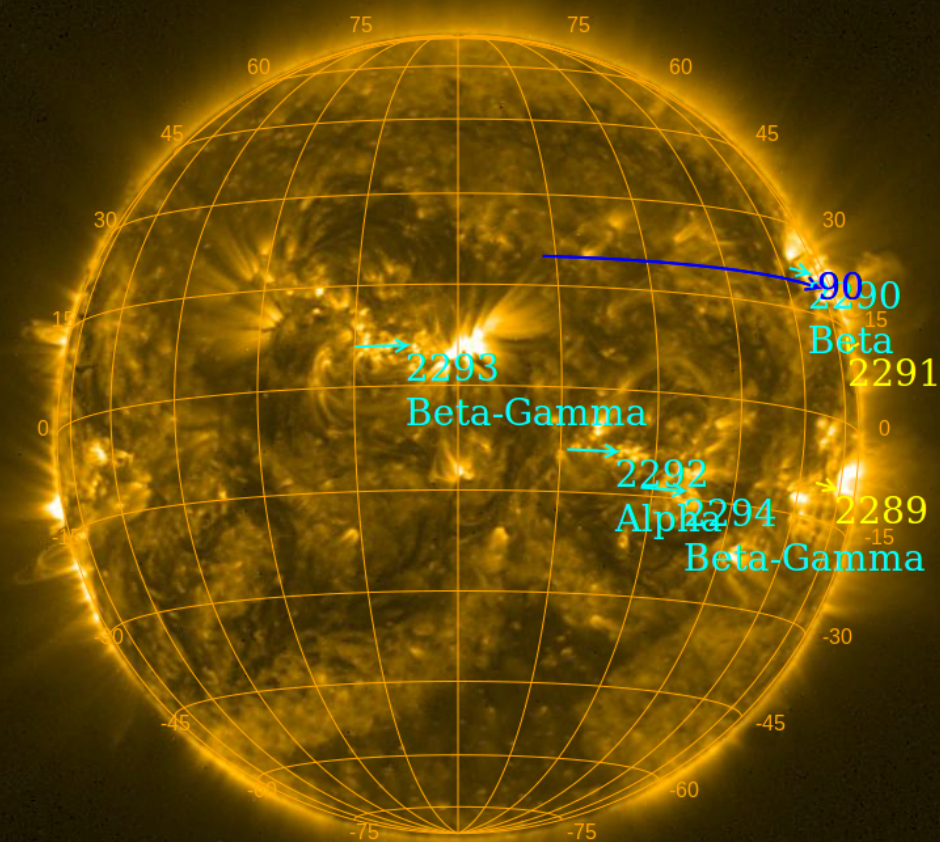
The SWAP images of Feb 23 and Mar 01 are shown below, with annotated active regions.



<http://sidc.be/soteria/soteria.php>

Catania sunspot groups
2015-02-25 08:30:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-03-01 00:30:00



PROBA2/SWAP 17.4nm
2015-03-01T12:53:28.657

Solar Activity

Solar flare activity fluctuated between quiet and low during the week.

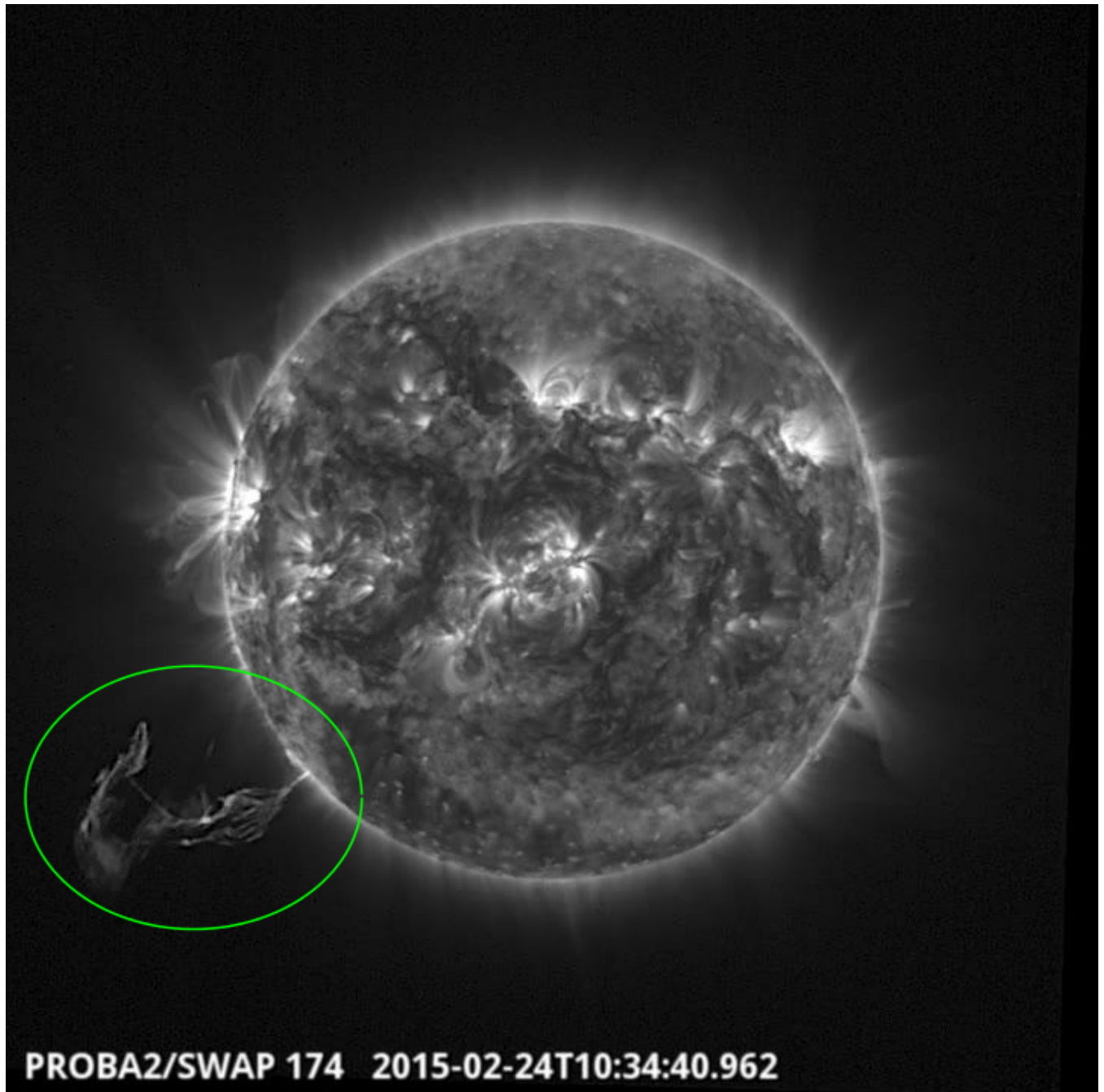
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 257).

Details about some of this week's events, can be found further below.

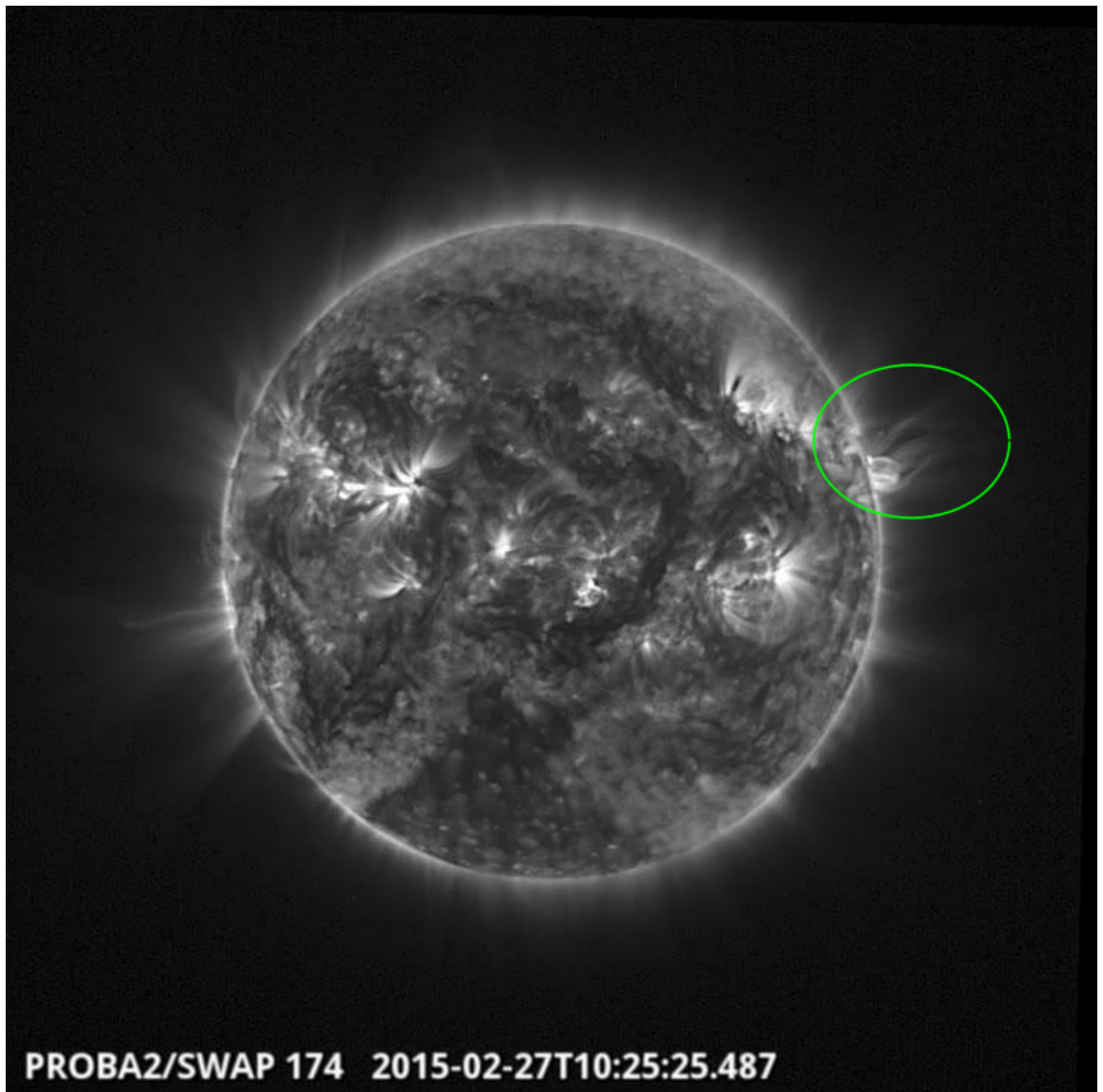
Tuesday Feb 24



PROBA2/SWAP 174 2015-02-24T10:34:40.962

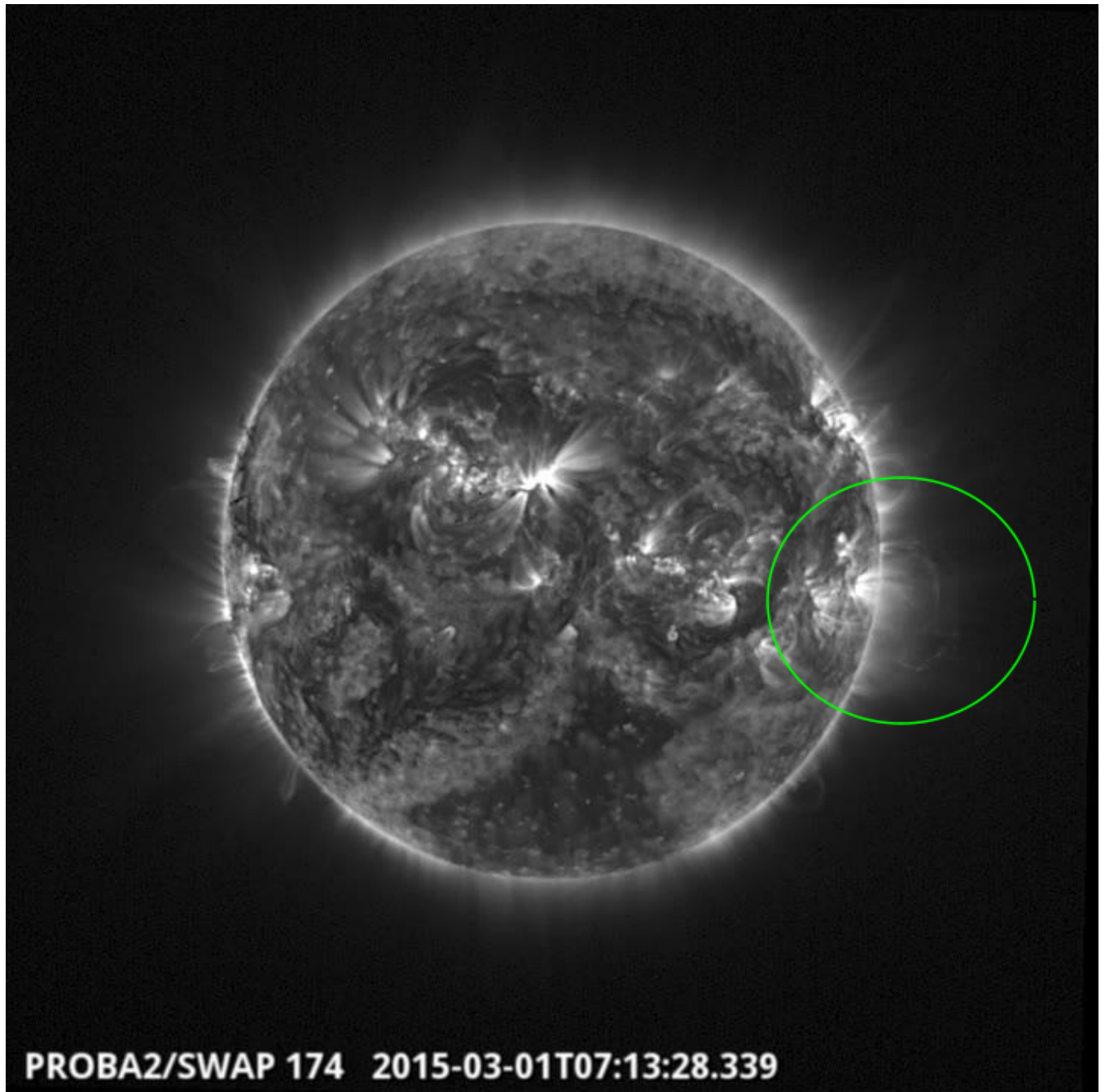
Eruption on south east limb @ 10:34 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Friday Feb 27



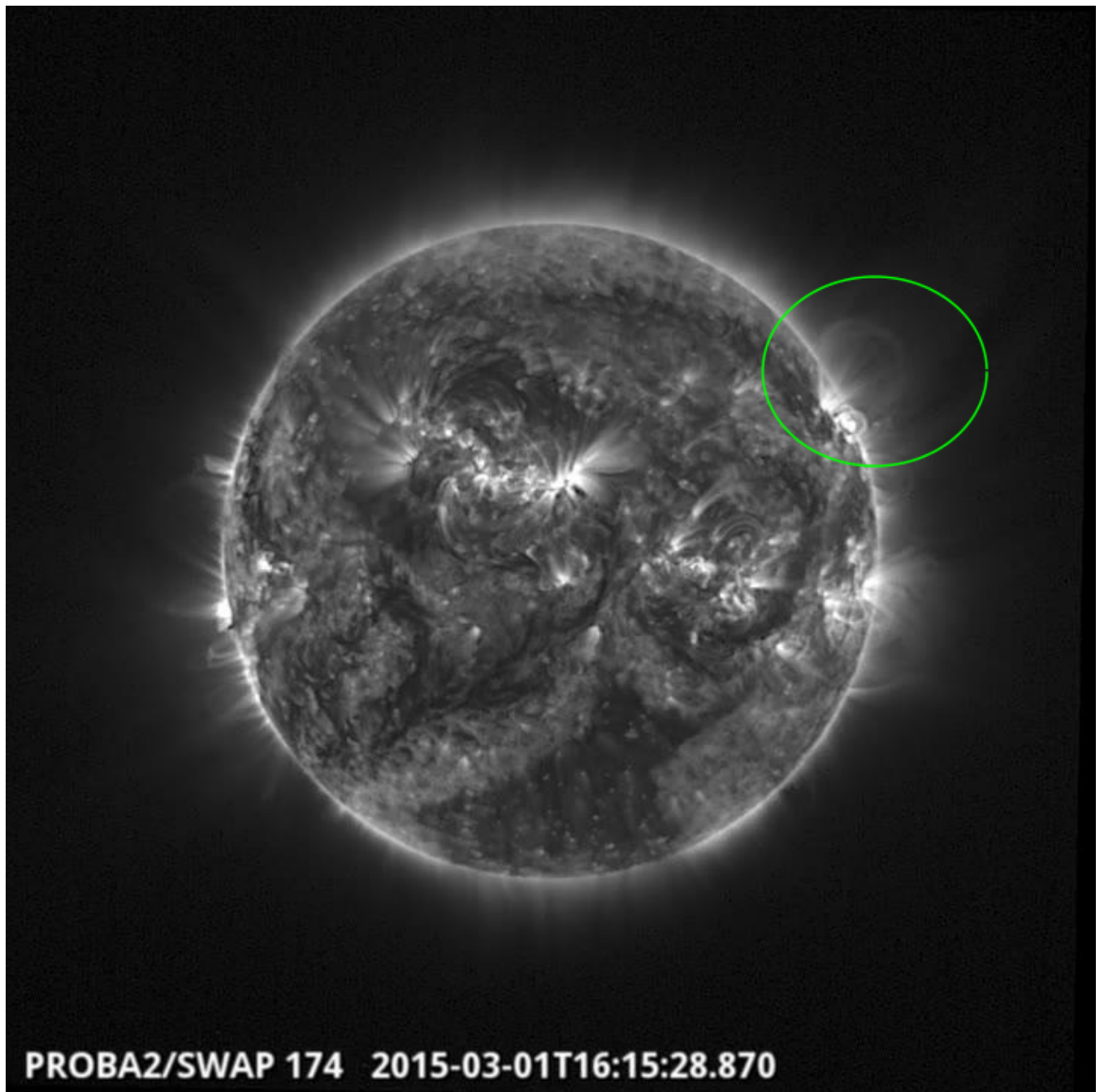
Eruption on the west limb @ 10:25 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Sunday Mar 01



PROBA2/SWAP 174 2015-03-01T07:13:28.339

Eruption on the west limb @ 13:28 - SWAP image
Find a movie of the event [here](#) (SWAP movie)



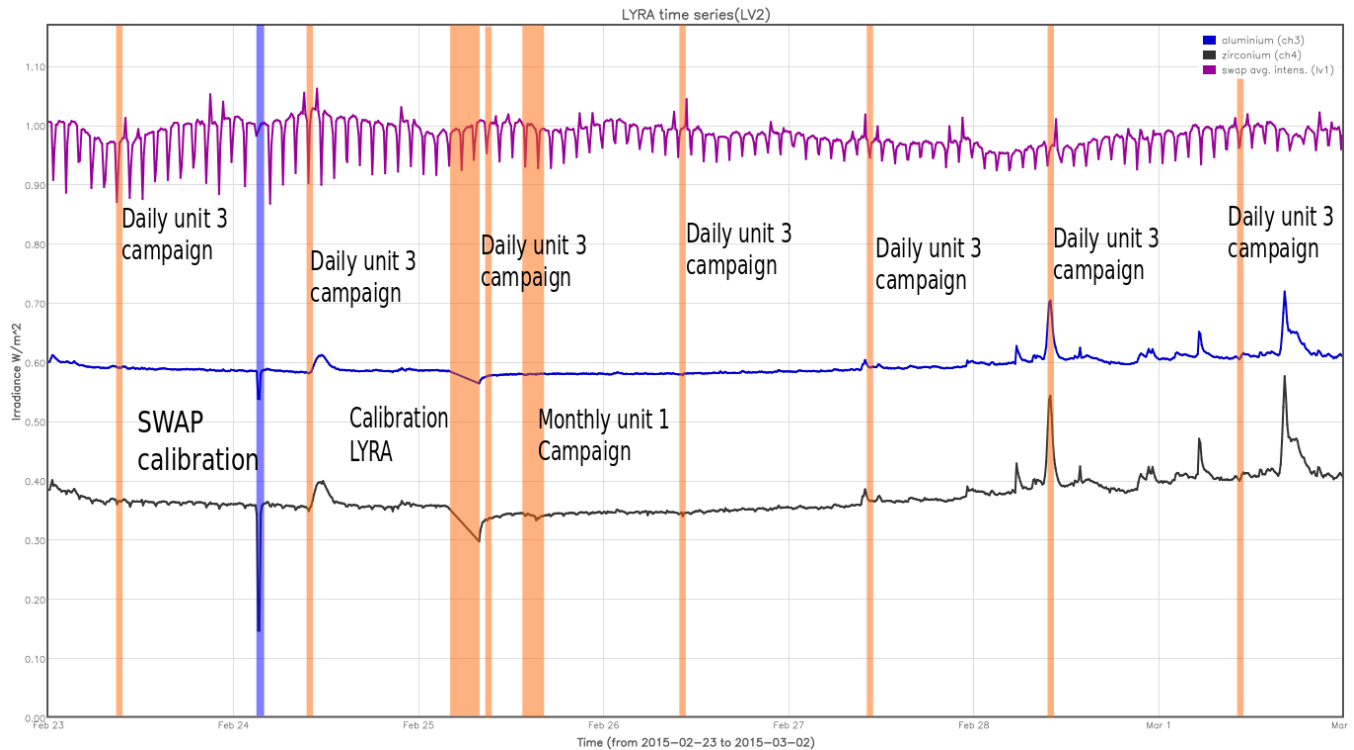
PROBA2/SWAP 174 2015-03-01T16:15:28.870

Eruption on the north west limb @ 16:15 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

An overview of the weekly LYRA & SWAP data is provided below:

The following curves are visible:

- black: Zirconium Channel LYRA Unit 2
- blue: Aluminium Channel of LYRA Unit 2
- purple: SWAVINT (SWAP Average Intensity; integrated solar intensity per SWAP image pixel)



The blue shaded periods correspond to, from left to right:

- SWAP bi-weekly calibration, 2015-Feb-24

The orange shaded periods correspond to, from left to right:

- Daily unit 3 campaign, 2015-Feb-23
- Daily unit 3 campaign, 2015-Feb-24
- Bi weekly calibration LYRA 2015-Feb-25
- Daily unit 3 campaign, 2015-Feb-25
- Monthly unit 1 campaign, 2015-Feb-25
- Daily unit 3 campaign, 2015-Feb-26
- Daily unit 3 campaign, 2015-Feb-27
- Daily unit 3 campaign, 2015-Feb-28
- Daily unit 3 campaign, 2015-Mar-01

Outreach, papers, presentations, etc.

Please consult <http://proba2.oma.be/science/publications> for a list of interesting articles using SWAP & LYRA data, as well as a link to the complete article list.

The science section of this weekly report is also published in the weekly STCE newsletter (<http://www.stce.be/newsletter/newsletter.php>).

A paper was published

- West, M.J. and Seaton, D.B. 2015: "SWAP Observations of Post-Flare Giant Arches in the long-duration 2014 October 14 Solar Eruption "

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 23 Feb	Tuesday 24 Feb	Wednesday 25 Feb	Thursday 26 Feb	Friday 27 Feb	Saturday 28 Feb	Sunday 01 Mar
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration + monthly unit 1	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00452	LYIOS00452	LYIOS00453	LYIOS00453	LYIOS00453	LYIOS00453	LYIOS00453

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- bi weekly calibration
- monthly unit 1 campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.2 and 52.8 °C, taking into account the daily U3 activation periods.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 26507 to 26541.

The number of MCPM unrecoverable errors increased from 4757 to 4925.

IOS & operations

Monday 23 Feb	Tuesday 24 Feb	Wednesday 25 Feb	Thursday 26 Feb	Friday 27 Feb	Saturday 28 Feb	Sunday 01 Mar
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00567 576 images	IOS00567 626 images	IOS00567 606 images	IOS00567 630 images	IOS00568 698 images	IOS00568 581 images	IOS00568 656 images

Special operations for SWAP, this week:

- calibration campaign on 24-Feb-2015
- The normal cadence was changed from 100 to 120, from 00:00 27-Feb-2015.

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.34 and -0.64 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

The following changes were made to the P2SC:

- None.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 16654 to 16717) was nominal, except for:

- None.

Data coverage HK

All HK data files (LYRA_AD) have been received, except:

- None.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except:

- None.

Total number of images between 2015 Feb 23 00:00 UT and 2015 Mar 01 23:59 UT: 4373

Highest cadence in this period: 30 seconds

Average cadence in this period: 138.29 seconds

Number of image gaps larger than 300 seconds: 0

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except:

- None

6. APPENDIX: Frequently used acronyms

ADPMS	Advanced Data and Power Management System
AOCS	Attitude and Orbit Control System
APS	Active Pixel image Sensor
ASIC	Application Specific Integrated Circuit
BBE	Base Band Equipment
CME	Coronal Mass Ejection
COGEX	Cool Gas Generator Experiment
CRC	Cyclic Redundancy Check
ESP	Experimental Solar Panel
FITS	Flexible Image Transport System
FOV	Field Of View
FPA	Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HK	Housekeeping
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
LYRA	LYman alpha RAdiometer
LYTMR	LYRA Telemetry Reformatter (software module of P2SC)
LYEDG	LYRA Engineering Data Generator (software module of P2SC)
MCPM	Mass Memory, Compression and Packetisation Module
MOC	Mission Operation Center
NDR	Non Destructive Readout
OBSW	On Board Software
PI	Principal Investigator
P2SC	PROBA2 Science Center
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SEU	Single Event Upset
SoFAST	Solar Feature Automated Search Tool
SWAP	Sun Watcher using APS detector and image Processing
SWAVINT	SWAP AVerage INTensity
SWBSDG	SWAP Base Science Data Generator
SWEDG	SWAP Engineering Data Generator (software module of P2SC)
SWTMR	SWAP Telemetry Reformatter (software module of P2SC)
TBC	To Be Confirmed
TBD	To Be Defined
TC	TeleCommand
UTC	Coordinated Universal Time
UV	Ultraviolet
VFC	Voltage to Frequency Converter

7. APPENDIX Solar Activity Definitions

In the science section we use the following solar activity standards.

The standard scale for solar activity is:

- very low (almost no flares, only B)
- low (a few C flares)
- moderate (many C flares and at least an M flare)
- high (several M flares and an X flare)
- very high (continuous background of C flares, numerous M flares, more than one X flare)